UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/587,727	06/05/2000	Nandu Gopalakrishnan	2-11-6	7894

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ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *25 March 2004*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-48* is/are pending in the application.

     4a) Of the above claim(s) *18-27 and 39-48* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-17 and 28-38* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on *05 March 2002* is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____.

       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1.   This office action, in response to the amendment filed 3/25/2004, is a non-final

office action.

Response to Arguments

2.   Claims 18-27 and 39-48, though withdrawn from consideration, are still pending

and must be cancelled.

3.   The objection to the abstract is withdrawn.

4.   No drawing corrections, proposed or otherwise have been received in the

response filed 3/25/2004. The objection to the drawings is maintained and stated below.

5.   Applicant's arguments, see amendment, filed 3/25/2004, with respect to the

rejections of claims 1-17 and 28-36 under Meyer in view of Pollman in view of Berger

have been fully considered and are persuasive. Therefore, the rejection has been

withdrawn. However, upon further consideration, new grounds of rejection are made in

view of the previously cited prior art. New motivation, stated in Berger, is provide in the

rejections below. In addition, the limitation of "based on a current system state" is

addressed below.

Drawings

6.   The drawings were received on 3/5/2002. These drawings are objected to as

stated below.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show

time slots 60, 62, 64, 66, 68, 70, 72 and 74 as stated on page 2, lines 4-10 in the

specification. Any structural detail that is essential for a proper understanding of the

disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed

drawing correction or corrected drawings are required in reply to the Office action to

avoid abandonment of the application. The objection to the drawings will not be held in

abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-4, 10-13, 28-31 and 37 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Meyer (US 5,541,595) in view of Pollman (US 5,233,348) further in

view of Berger (US 2001/0012271).

Regarding claims 1, 10, 28 and 37, Meyer discloses a method of encoding

messages (column 1, lines 31-45). The messages are separated into groups as shown

in table 1. Table 1 shows messages (CODES) S1, S2, S3, S4, S5 and S6 and their

associated Huffman code. S1, S2 and S3 are converted into 2 bit messages. This is a

first group. S5 and S6 are converted into 4 bit messages. This is a second group. The

number of messages in the first group is unequal to the number of messages in the

second group. These messages (Huffman codes) will be transmitted (column 2, lines 11-16).

Meyer does not disclose the second group of messages is based on a prior transmitted message. However, Pollman discloses, "Huffman coding is an optimum statistical coding procedure capable of approaching the theoretical entropy limit, given prior knowledge of the probability of all possible events. The encoder can generate such probability distributions and send them to the decoder prior to transmission of a given frame. This table is used to derive Huffman code words where relatively short code words are assigned to events with the highest probability of occurrences." This is disclosed in column 7 lines 24-38 of Pollman. Therefore, the probability distribution is sent to the decoder prior to the transmission of the messages (frame) and the grouping based on probability is based on the distribution found in this transmission.

Since Pollman discloses fundamental components of Huffman coding, it would have been obvious for one of ordinary skill in the art at the time of the invention to include the teachings of Pollman in the coding system of Meyer. Pollman simply elaborates on necessary information for Huffman codes to function properly.

The combination stated above does not discloses the encoded data is a rate request signal. Berger discloses transmitting a rate request signal is useful to change the present rate of data being transmitted (paragraph 0011). It would have been obvious for one of ordinary skill in the art to include the teachings of Berger into the combination of Meyer and Pollman. By changing the transmission rate via a rate request signal, the data is received properly from the destination. Berger states "this rate is more than the

destination can handle and results in either loss of data at the private destination

network or a requirement that the private destination network include high speed buffers

to receive data that arrives too fast for the private destination to route." (paragraph

0009). These deficiencies are overcome by the teachings of Berger (paragraph 0010).

Regarding claims 2, 11 and 29, Meyer discloses a first number of bits (two) are

used to represent messages in the first group, which is different than a second number

of bits (four) used to represent messages in the second group as shown in table 1.

Regarding claims 3, 12 and 30, Meyer discloses a message from the first group

has a higher probability of being transmitted than a message from the second group

since codes having high probabilities of occurrence are converted into Huffman codes

of short bit length as stated in column 2, lines 11-16).

Regarding claims 4, 13 and 31, Meyer discloses the number of bits used to

represent messages in the first group is lower than the number of bits used to represent

messages in the second group since codes having high probabilities of occurrence are

converted into Huffman codes of short bit length as stated in column 2, lines 11-16).

8.   Claims 5-9, 14-17, 32-36 and 38 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Meyer (US 5,541,595) in view of Pollman (US 5,233,348) further in

view of Berger (US 2001/0012271) further in view of Padovani (US 6,411,799).

Regarding claims 5, 14, 32 and 38, Meyer discloses a method of encoding

messages (column 1, lines 31-45). The messages are separated into groups as shown

in table 1. Table 1 shows messages (CODES) S1, S2, S3, S4, S5 and S6 and their

associated Huffman code. S1, S2 and S3 are converted into 2 bit messages. This is a

first group. S5 and S6 are converted into 4 bit messages. This is a second group. The

number of messages in the first group is unequal to the number of messages in the

second group. These messages (Huffman codes) will be transmitted (column 2, lines

11-16). The first and second messages are based on the current state of the system so

that the messages have the highest probability of occurring. If these probabilities

changed, so would the coding.

Meyer does not disclose the second group of messages is based on a prior

transmitted message. However, Pollman discloses, "Huffman coding is an optimum

statistical coding procedure capable of approaching the theoretical entropy limit, given

prior knowledge of the probability of all possible events. The encoder can generate such

probability distributions and send them to the decoder prior to transmission of a given

frame. This table is used to derive Huffman code words where relatively short code

words are assigned to events with the highest probability of occurrences." This is

disclosed in column 7 lines 24-38 of Pollman. Therefore, the probability distribution is

sent to the decoder prior to the transmission of the messages (frame) and the grouping

based on probability is based on the distribution found in this transmission.

Since Pollman discloses fundamental components of Huffman coding, it would

have been obvious for one of ordinary skill in the art at the time of the invention to

include the teachings of Pollman in the coding system of Meyer. Pollman simply

elaborates on necessary information for Huffman codes to function properly.

The combination stated above does not discloses the encoded data is a rate request signal. Berger discloses transmitting a rate request signal is useful to change the present rate of data being transmitted (paragraph 0011). It would have been obvious for one of ordinary skill in the art to include the teachings of Berger into the combination of Meyer and Pollman. By changing the transmission rate via a rate request signal, the data is received properly from the destination. Berger states "this rate is more than the destination can handle and results in either loss of data at the private destination network or a requirement that the private destination network include high speed buffers to receive data that arrives too fast for the private destination to route." (paragraph 0009). These deficiencies are overcome by the teachings of Berger (paragraph 0010).

The combination above does not disclose the first group is transmitted at a different power than the second group. However, it is obvious for one of ordinary skill in the art at the time of the invention to know that any group with fewer bits will be transmitted at lower power than a message with more bits. This is shown in column 1, lines 60-65 of Padovani. Padovani states a system increases capacity by transmitting fewer bits thereby using less power. It requires power to transmit a bit and the fewer that are transmitted, the less power will be used.

Regarding claims 6, 15 and 33, Meyer discloses a first number of bits (two) are used to represent messages in the first group, which is different than a second number of bits (four) used to represent messages in the second group as shown in table 1.

Regarding claims 7, 16 and 34, Meyer discloses a message from the first group has a higher probability of being transmitted than a message from the second group

since codes having high probabilities of occurrence are converted into Huffman codes

of short bit length as stated in column 2, lines 11-16).

Regarding claims 8, 9, 17, 35 and 36, Meyer discloses the number of bits used to

represent messages in the first group is lower than the number of bits used to represent

messages in the second group since codes having high probabilities of occurrence are

converted into Huffman codes of short bit length as stated in column 2, lines 11-16).

Contact Information

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry or
for informal or draft communications, please label "PROPOSED" or
"DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA, Sixth Floor (Receptionist). .

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Kevin Burd, whose telephone number is (703) 308-
7034. The Examiner can normally be reached on Monday-Thursday from 9:00 AM -
6:00 PM.

Any inquiry of a general nature or relating to the status of this application should
be directed to the Group receptionist whose telephone number is (703) 305-3800.

Kevin M. Burd
PATENT EXAMINER
6/7/2004